

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

XR COMMUNICATIONS, LLC, dba  
VIVATO TECHNOLOGIES

*Plaintiff,*

v.

AT&T SERVICES INC., AT&T MOBILITY  
LLC, and AT&T CORP.

*Defendant,*

NOKIA OF AMERICA CORPORATION,  
ERICSSON INC.

*Intervenors.*

Case No. 2:23-cv-00202-JRG-RSP  
(Lead Case)

JURY TRIAL DEMANDED

XR COMMUNICATIONS, LLC, dba  
VIVATO TECHNOLOGIES,

*Plaintiff,*

v.

VERIZON COMMUNICATIONS, INC. and  
CELLCO PARTNERSHIP D/B/A VERIZON  
WIRELESS.

*Defendants,*

NOKIA OF AMERICA CORPORATION,  
ERICSSON INC.

*Intervenors.*

Case No. 2:23-cv-00203-JRG-RSP  
(Member Case)

JURY TRIAL DEMANDED

XR COMMUNICATIONS, LLC, dba  
VIVATO TECHNOLOGIES,

*Plaintiff,*

v.

T-MOBILE USA, INC.

*Defendant,*

NOKIA OF AMERICA CORPORATION,  
ERICSSON INC.

*Intervenors.*

Case No. 2:23-cv-00204-JRG-RSP  
(Member Case)

JURY TRIAL DEMANDED

**PLAINTIFF XR COMMUNICATIONS, LLC'S  
OPENING CLAIM CONSTRUCTION BRIEF**

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Exhibit 3	U.S. Patent No. 8,737,511	'511 Patent
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## I. INTRODUCTION

Plaintiff XR Communications, LLC, dba Vivato Technologies (“Vivato”) and Defendants<sup>1</sup> offer very different approaches to claim construction. Defendants rely almost exclusively on revisionism. *First*, as they did in their IPR Petition, Defendants seek to re-define and read out the “pre-equalization” requirement in the ’369 patent. As the PTAB did, this Court should reject that and hold that the claim requires “pre-equalization.” *Second*, for the remaining ’369 patent terms, Defendants claim the terms are indefinite, but these terms are readily understood in the context of the terms’ respective intrinsic records. *Third*, Defendants seek to construe the ’939 patent in a manner contrary to the intrinsic record and to previous claim constructions from the Western District of Texas or the Central District of California. Defendants’ proposals should be rejected just as they were before. *Finally*, Defendants seek to construe terms in the ’511 and ’235 patents, like “transceiver,” which are readily understood by persons of ordinary skill in the wireless communications field of the inventions. No construction for such well-understood terms is needed.

## II. U.S. PATENT NO. 7,177,369 (“’369 PATENT”)

### A. “forward path pre-equalization parameter” / “determining at least one forward path pre-equalization parameter based on said at least one transmission delay” / “modifying a forward path data signal that is to be transmitted to the receiving device based on said at least one forward path pre-equalization parameter” (’369 patent, claims 1, 13, 21, 32, 33, 41)

Term in Dispute	Plaintiff’s Proposal	Defendants’ Proposal
“forward path pre-equalization parameter” / “determining at least one forward path pre-equalization parameter based on said at least one transmission delay”	Plain and ordinary meaning, i.e., a pre-equalization parameter for modifying a forward path signal to reduce unwanted effects associated with multipath fading between the transmitter and the receiver that is determined based on said at least one multipath transmission delay.	Plain and ordinary meaning.

<sup>1</sup> For simplicity, “Defendants” refers collectively to Defendants and Intervenor.

Term in Dispute	Plaintiff's Proposal	Defendants' Proposal
“modifying a forward path data signal that is to be transmitted to the receiving device based on said at least one forward path pre-equalization parameter”	Plain and ordinary meaning, wherein “pre-equalization” has its plain and ordinary meaning, i.e., modifying a signal to reduce unwanted effects associated with multipath fading between the transmitter and the receiver	

The parties dispute whether claim 1 requires “pre-equalization” based on the “multipath transmission delay,” i.e., whether the claimed “pre-equalization parameter” must be used for pre-equalization. A review of the intrinsic evidence confirms that it does.

This dispute arose in concurrent IPR proceedings in IPR2024-00314. There, Defendants’ position was that pre-equalization isn’t a claim requirement and that that claim 1 can be met by a system that doesn’t perform pre-equalization at all. Defendants contended in the IPR that all that is required of “pre-equalization parameter” is to modify power levels for two OFDM tones. Ex. 9<sup>2</sup> at 1-2. As the Board held, this is inconsistent with overwhelming intrinsic evidence (including the ’369 patent’s title, abstract, problem to be solved, claimed solution, and every embodiment). In its Decision Denying Institution, the Board rejected Defendant’s construction as inconsistent with the plain meaning of “pre-equalization.” Ex. 12 (’369 IPR Institution Decision) at 14-15 (“Accordingly, we understand the term pre-equalization parameter to encompass a parameter used for pre-equalization, that is, to account for properties of a propagation path between a transmitter and a receiving device, where the parameter is based on at least one multipath transmission delay identified from a reverse path data signal received from the receiving device and where a forward path data signal is modified based on the parameter.”); 25 (“[F]irst and foremost, independent claim 1 requires the application of a *pre-equalization* parameter.”) (holding that the Petition fails

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<sup>2</sup> Citation to exhibits are to the exhibits of the concurrently filed attorney declaration.



to show how “Wong’s total power minimization process performs *pre-equalization*, so as to modify the transmission signal *to account for* the properties of the propagation paths between the base station and the receiver.”) (emphasis original). The Court should similarly reject Defendant’s proposal and clarify here that “pre-equalization parameter” in claim 1 requires a parameter *used for pre-equalization* based on the multipath transmission delay.

The ’369 patent is titled “Multipath communication methods and apparatuses.” It teaches novel methods to (1) “characterize the multipath delays that may exist between communicating devices” and (2) use “pre-equalization techniques” to mitigate these multipath effects. Ex. 1 (’369 Patent), Title, Abstract, Claim 1; *see also* col. 7:13-21.

Claim 1 recites: [1a] “identifying at least one multipath transmission delay within a reverse path data signal received from a receiving device”; [1b] “determining at least one forward path pre-equalization parameter based on said at least one [multipath]<sup>3</sup> transmission delay” and [1c] “modifying a forward path data signal that is to be transmitted to the receiving device based on said at least one forward path pre-equalization parameter, where said modifying includes selectively setting different transmission power levels for at least two Orthogonal Frequency Division Multiplexing (OFDM) tones in said forward path data signal.” *Id.* at cl. 1.

Under Plaintiff’s view, “pre-equalization” in [1c] has the same meaning that it has in [1b], requiring “pre-equalization” based on the “multipath transmission delay.” But in their IPR on the ’369 Patent, Defendants argued in favor of broadening the scope of the claim to support their invalidity theories. Specifically, Defendants argued that when applying element [1c], it is permissible to disregard the claim language in elements [1a] and [1b] (requiring a pre-equalization

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<sup>3</sup> The Parties agree that the phrase “said at least one transmission delay” means “the at least one multipath transmission delay” from the preceding claim element. *See* Joint Claim Construction Statement (Agreed Constructions).

*parameter based on said at least one multipath transmission delay*) and interpret the term “pre-equalization” in claim [1c] to mean “selectively setting different transmission power levels,” and nothing more. Defendants argue that [1c] does not require pre-equalization and “pre-equalization parameter” is any “parameter” that sets different transmission power levels of OFDM tones:

The claim already recites that “pre-equalization” performs a very specific action (modifying the power levels for two OFDM tones before transmission). Thus, the claim language recites the complete usage chosen by the patentee to define the claim.

Ex. 9, IPR2024-00314, May 8, 2024 Response to POPR, at 1-2.

However, this fails. Defendants’ construction would read out of the claim and exclude from claim 1 the requirement for “*pre-equalization*” “*based on said at least one [multipath] transmission delay*.” Because *all* terms in elements [1a] and [1b] must be given effect, the “*pre-equalization parameter*” in [1c] must perform pre-equalization, consistent with its meaning in [1b]. Defendants’ construction is inconsistent with intrinsic evidence and a POSITA’s understanding.

*First*, Defendants’ proposed construction is contradicted by the claim language of claim 1. Defendants contend “pre-equalization” means what is recited in [1c] after the “where said modifying includes” clause. But this disregards the claim language regarding pre-equalization, including in [1b]. All words in the claim must be given effect. This is especially important where, as here, the words in [1b] explain the meaning of the term that appears in [1c]. These words confirm that “pre-equalization parameter” requires “*pre-equalization*” in the context of *multipath transmission delay*. There is no support for reading [1c] in a vacuum divorced from [1b].

Further, under Defendants’ view, the claim would have exactly the same scope if the term “pre-equalization parameter” were replaced with “parameter,” allegedly because pre-equalization is fully captured by the language in [1c] relating to setting transmission power levels of OFDM tones. This is erroneous, and there is no basis to strip out substantive words of the claim. The term

“pre-equalization” is recited in the claim. It is recited as determined “based on said multipath transmission delay.” It is also recited as modifying a forward path signal. This language, read together, confirms that the term “pre-equalization” has meaning, and that its meaning is informed by the language in [1a] and [1b] which describes that the pre-equalization parameter is determined from and characterized by the multipath transmission delay. There is no support for defining “pre-equalization” based only on [1c] in a manner that is inconsistent with its meaning in [1b].

*Second*, the specification also supports that pre-equalization is a claim requirement, not a meaningless modifier to the term “parameter.” The specification describes pre-equalization as “reduc[ing] unwanted effects associated with multipath fading between the transmitter and the receiver.” Ex. 1 (’369 Patent), Abstract, Claim 1, 7:13-21. There should be no dispute that the claimed “pre-equalization parameter” must be determined based on the multipath transmission delay and that it must pre-equalize based on this multipath delay. Ex. 1 (’369 Patent), Abstract, Claim 1, 7:13-21, 11:6-7 (describing “pre-equalize multipath delays”). Indeed, pre-equalization is presented as a key component of the invention. *Id.* 4:44-7:4 (discussing shortcomings with traditional techniques to deal with multipath propagation delays), 7:13-21 (introducing novel “pre-equalization technique” that “substantially reduces unwanted effects associated with multipath fading”). This is apparent from the patent’s title, abstract, problem to be solved, claimed solution, and every embodiment. *See id.* When the patent introduces the claimed inventions in col. 7, it states that in “the present invention,” “equalization techniques are provided for use at a transmitting node and configured to perform [multipath pre-equalization].” ’369 patent at 7:14–21. And it states that the description applies to later examples and embodiments. *Id.* (“Such pre-equalization techniques are discussed in greater detail in later sections.”). Thus, every embodiment is consistent with the understanding that pre-equalization in claim 1 has meaning.

*Third*, that [1c] requires “pre-equalization” would be well understood from the plain meaning of “pre-equalization.” In IPR2024-00314, the Board found that, at a minimum, pre-equalization requires “accounting for properties of a propagation path.”<sup>4</sup> Ex. 12 at 15. A POSITA further understands that pre-equalization requires reducing adverse effects. The IEEE dictionary defines pre-equalization (or pre-emphasis) as: “A process in a system designed to emphasize the magnitude of some frequency components with respect to the magnitude of others, to reduce adverse effects, such as noise, in subsequent parts of the system.” Ex. 10 (Excerpt from Authoritative Dictionary of IEEE Standards Terms, 7th ed., Dec. 2000). As this makes clear, pre-equalization is about “reduc[ing] adverse effects, such as noise” and, thus, there can be different types of adverse effects that are the object of the pre-equalization, depending on context. A POSITA reading the ’369 Patent would understand from the contextual language of claim [1b] and col. 7:14-21 (“reduces unwanted effects associated with multipath fading”) that the *claimed* pre-equalization refers to accounting for multipath effects (as opposed to other types of effects). The discussion of pre-equalization in the ’369 patent closely tracks the IEEE definition, including the language of “to reduce adverse effects.” Ex. 1 (’369 patent) at 7:14–21. The ’369 patent read in light of the understanding of a POSITA confirms that pre-equalization retains its plain and ordinary meaning. Ex. 1 (’369 patent) at 7:14–21, cl. 1.

Thus, “pre-equalization parameter” requires a parameter *used for pre-equalization* based on the multipath transmission delay. *See* Ex. 12 at 15 (claim 1 requires a “parameter used for pre-equalization, that is, to account for properties of a propagation path between a transmitter and a receiving device, where the parameter is based on at least one multipath transmission delay...and where a forward path data signal is modified based on the parameter.”), 25 (same).

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<sup>4</sup> All emphasis is added, unless otherwise indicated as being from the original quotation.

**B. “substantially reciprocal to” (’369 patent, claim 12)**

Plaintiff’s Proposal	Defendants’ Proposal
No construction necessary; plain and ordinary meaning	Indefinite term of degree

The specification must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention.” 35 U.S.C. § 112 ¶ 2. In *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014), the Supreme Court “h[e]ld that a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” Definiteness is measured from the viewpoint of a POSITA at the time the patent was filed. *Id.* at 908. The party challenging the validity of the patent-in-suit bears the burden of proving indefiniteness by clear and convincing evidence. *Id.* at 912 n.10 (citing *Microsoft Corp. v. i4i Ltd. Partnership*, 564 U.S. 91, 95 (2011)).

But Defendants do not present any evidence that the *scope* of the claimed invention is uncertain. The Federal Circuit has explained that “[b]ecause language is limited, we have rejected the proposition that claims involving terms of degree are inherently indefinite.” *Sonix Tech. Co. v. Publications Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017). “Thus, ‘a patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement.’” *Id.* “Claim language employing terms of degree has long been found definite where it provided enough certainty to one of skill in the art when read in the context of the invention.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014). In determining whether the patent has provided sufficient guidance for a term of degree, a reviewing court should “look to the written description for guidance.” *Id.* at 1371.

Here, the ’369 patent explains what “substantially reciprocal” means. Ex. 1 (’369 Patent), 2:13-16, 7:21-34, 10:61-11:5, 11:62-66. In fact, as shown below, the term “substantially

reciprocal” is not a term of degree; rather, the “substantially” modifier is added to clarify that the channel need not be reciprocal for all times but rather only for a “given moment in time.” *Id.*

There can be no dispute that “reciprocal” would be well understood in this context. The ’369 patent explains that channel “reciprocity” is a well-known property in wireless channels:

As is well known, many materials are electromagnetically isotropic, which is a property resulting from symmetry in their associated permittivity and permeability tensors. The Lorentz Reciprocity Theorem applies to such materials. Refraction and dielectric reflection from materials therefore often show reciprocity, or equivalence of forward and reverse channel characteristics. Diffraction and reflection are inherently reciprocal due to the minimal media affecting the electromagnetic wave. Thus, reciprocity can be used to determine channel characteristics that are used while pre-equalizing a transmitted path. The use of a reciprocal channel is very useful, for example, when Time Division Duplex (TDD) channels are implemented.

Ex. 1 (’369 Patent), 7:21-34.

It is well known that unlike reciprocal Time Domain Duplex (TDD) systems, channel reciprocity is “not available” for “Frequency Division Duplex” systems. *Id.* 16:17-22.

Further, the ’369 patent explains that what is meant to persons of ordinary skill in the art by the term “substantially reciprocal” means that the channel is reciprocal not in an absolute sense for all times, but rather that the channel only needs to be understood to be reciprocal for at least a “given moment in time” between a base station device and a consumer premise equipment device.”

Ex. 1 (’369 Patent), 2:13-16 (“Here, it is preferred that the reverse transmission path be substantially reciprocal to the forward transmission path, for example, at a given moment in time between a base station device and a consumer premise equipment device.”). This language in column 2 confirms that “substantially reciprocal” means “at a given moment in time.” *Id.*

Elaborating on this point, the '369 patent explains that reciprocity is an assumption about the channel that persons of ordinary skill in the art make about Time Division Duplex (TDD) systems for certain durations of time. Ex. 1 ('369 Patent), 10:61-11:5. Here, the '369 patent explains that “[i]f TDD is used, then the channel can be assumed to be reciprocal for durations (coherence time) of approximately 10 ms.” *Id.* 10:61-11:5. This confirms, consistent with column 2, “substantially reciprocal” is not about the degree of reciprocity but to clarify that the reciprocity need only be applicable for a given moment or duration of time as opposed to for *all* times.

**C. “a plurality of first device receive antennas” ('369 patent, claim 19)**

Plaintiff's Proposal	Defendants' Proposal
No construction necessary; plain and ordinary meaning	Indefinite

Claim 19 (which depends from claim 15) informs, with reasonable certainty, the scope of the invention. Claim 15 recites “using at least one transmitting device receive antenna operatively coupled to said transmitting device to receive said reverse path data signal over at least one reverse transmission path from the receiving device.” Claim 19 adds the limitation “wherein said transmitting device is operatively coupled to a plurality of first device receive antennas.” Thus, while claim 15 recites “at least one transmitting device receive antenna,” claim 19 adds the further requirement that the “transmitting device” is “operatively coupled” to a “plurality of first device receive antennas.” A person having ordinary skill in the art would understand with reasonable certainty that while claim 15 could be satisfied by one receive antenna, claim 19 adds the requirement for a plurality of receive antennas. Finally, while claim 19 specifies “first device receive antennas” rather than “transmitting device receive antenna,” this does not render the scope of claim 19 indefinite. A POSITA would understand each of these words without a problem.

### III. U.S. PATENT NO. 8,289,939 (“’939 PATENT”)

#### A. Summary of the ’939 Patent

The ’939 patent is entitled “Signal communication coordination,” and claims priority to Provisional Patent Application Nos. 60/423,702 and 60/423,696, both filed on Nov. 4, 2002. The ’939 Patent is in the field of wireless communications, including “WiFi” networks that operate in accordance with “IEEE 802.11” standards. It describes an exemplary access station for wireless communications that includes a wireless input/output unit that establishes a plurality of access points. The wireless input/output unit is a structure familiar to an ordinary artisan, including MACs, baseband units, radio frequency parts, an Ethernet switch/router, a beamformer, and an antenna array. ’939 Patent, 6:54-64. The wireless input/output unit is depicted in Figure 4 as containing a signal transmission/reception coordination logic that is adapted to “restrain transmission on a first channel with a first access point 402 even when receiving a wireless communication on a second different channel with a second access point 402.” *Id.* 6:22-54.

#### B. “wireless input/output (I/O) unit” (’939 patent, claims 15, 30)

Plaintiff’s Proposal	Defendants’ Proposal
<p>No construction necessary; plain and ordinary meaning; not subject to means-plus-function treatment under 35 U.S.C. § 112 (6).</p> <p>Alternative proposed construction, should the term be treated as a means-plus-function limitation: not indefinite.</p> <p><b>Function:</b> Claims 15, and 30: establish a plurality of access points</p> <p><b>Structure:</b> Wireless input/output unit 206 and equivalents thereof.</p>	<p>Means-plus-function under § 112, ¶ 6 and indefinite.</p> <p><b>Function:</b> establish a plurality of access points</p> <p><b>Structure:</b> none disclosed</p>

The phrase “wireless input/output (I/O) unit” does not invoke § 112 ¶ 6. Alternatively, if the Court does construe this phrase as subject to § 112 ¶ 6, the term is not indefinite because the



structure that is clearly linked to the purported functions is set forth in the specification such that a POSITA would understand that structure with reasonable certainty.

**i. Pre-AIA 35 USC. § 112 ¶ 6<sup>5</sup> is not applicable because this term recites sufficiently definite structure.**

“The failure to use the word ‘means’ creates a rebuttable presumption that § 112 ¶ 6 does not apply.” *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1007 (Fed. Cir. 2018). This presumption cannot be overcome unless “the challenger *demonstrates* that the claim term fails to recite sufficiently definite structure or else recites function without reciting structure for performing that function.” *Id.* (emphasis in original) (quoting *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015)). “From a procedural standpoint, this presumption imposes on [Defendants] a burden of going forward with evidence to rebut ... the presumption.” *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1367 (Fed. Cir. 2022) (quoting *Apex, Inc. v. Raritan Comp., Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003)).

Thus, to invoke § 112 ¶ 6, Defendants bear the burden of showing that “wireless input/output (I/O) unit” fails to “recite sufficiently definite structure” and recites “function without reciting sufficient structure for performing that function,” in light of the intrinsic record and extrinsic evidence presented. *See Zeroclick*, 891 F.3d at 1007. Defendants cannot meet this burden.

In *XR Communications LLC v. D-Link Systems, Inc. et al.*, Lead Case No. 8:17-cv-596-DOC (Carter, J.) (D.I. 312, Order Adopting Special Master’s Report and Recommendations Regarding Claim Construction [D.I. 280]), the Court for the U.S. District Court for the Central District of California construed the term “wireless input/output (I/O) unit” to have its plain and ordinary meaning and found that the accused infringers could not rebut the presumption that 35

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<sup>5</sup> Pre-AIA Section 112 ¶ 6 applies here because the priority date of the ’939 patent pre-dates enactment of the America Invents Act.

U.S.C. § 112 ¶6 does not apply. This Court should reach the same result. The Honorable Judge Carter’s Claim Construction Order (Ex. 5, D.I. 312) adopting the Special Master’s Report and Recommendations (Ex. 6, R&R) provides detailed reasons why 35 U.S.C. § 112 ¶ 6 does not apply to the term “wireless input/output (I/O) unit.” *See* Ex. 5, 6-8; Ex. 6, 40-43 (citing Ex. 13).

The term “wireless input/output (I/O) unit” recites sufficiently definite structure and connotes structure considering the claims, specification, and knowledge of an ordinary artisan. First, the California Court correctly held that the claim term itself—wireless input/output unit—connotes structure. Ex. 5 at 7, citing R&R at 40-43. The Court held that the modifier (wireless input/output (I/O)) connotes structure and is analogous to the “wireless device means” term found to connote structure in *Skyy, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014 (Fed. Cir. 2017). The California Court observed that in *Skyy*, the claim term recited “wireless device means” and thus was *presumed* to be means-plus-function, but the Federal Circuit still found that the modifier “wireless device” carried sufficiently strong structural connotations to overcome the presumption. Ex. 5 at 7-8, citing Ex. 6 (R&R) at 43. In the present case, the term at issue (wireless input/output unit) does not use “means” and is therefore presumed *not* to be means-plus-function, so the analysis in *Skyy* applies “with even greater force in the present case, particularly in light of the above-cited disclosure in the specification [at 4:17-23].” Ex. 6 at 43. The Special Master also credited the expert testimony that the term “wireless I/O unit” in the claims is a known structure, crediting the opinions of Plaintiff’s expert as “further persuasive in this regard. (See Pl. CC Opening, Ex. 4, Nov. 2, 2021 Vojcic decl. at ¶¶107-117.)” *Id.* (citing Ex. 13). The Court agreed and adopted the Special Master’s recommendation that the term connotes structure. Ex. 5 (CDCA Order) at 7-8.

Second, the California Court also held this term connotes structure in the specification:

Finally, the specification confirms that the term “wireless input/output (I/O) unit” connotes structure because as noted in the R&R, “the specification refers to a

wireless I/O unit as including structures and as being part of a structure.” R&R at 42 (citing ’939 Patent at 4:17–23 (“[a]ccess station 102 includes wireless I/O unit 206”; “[w]ireless I/O unit 206 includes an antenna array 208 that is implemented as two or more antennas, and optionally as a phased array of antennas”), 5:30–37 (similar), 6:60–64 (“Such a wireless I/O unit 206 may also optionally include one or more of Ethernet switch/router 602, beamformer 612, and antenna array 208.”

This correct holding recognizes that in the ’939 specification, the term “wireless input/output (I/O) unit” connotes structure, including because it is depicted as a physical structure component in access station 102 (’939 Patent, 4:17-23), it is a physical structure that includes an antenna array 208 (*id.* 5:30-37), and it may include a beamformer and ethernet router, which are also physical structures (*id.* 6:60-64). Because the wireless I/O unit is within a physical structure and itself contains physical structures, a POSITA would understand that this term refers to a physical object generally known in the art, and therefore cannot be a means-plus-function term.

Thus, there is no evidence to rebut the presumption against means-plus-function treatment here. To the extent Defendants focus on “unit,” the Court must construe the complete term (“wireless input/output (I/O) unit”) rather than “unit” in isolation, and the full phrase connotes structure. Indeed, this Court has construed similar terms, such as “receiving unit” and “sending unit,” as structural terms. *Huawei Tech. Co. Ltd. v. T-Mobile US, Inc.*, 2017 WL 1376436, \*15-17 (E.D. Tex. 2017) (ruling a POSITA would understand “receiving unit”, “sending unit”, and “storage unit” are structures given intrinsic evidence in a communication network device patent).

Finally, the intrinsic evidence also shows the inputs, outputs, structural connections, and operations of the wireless I/O unit which additionally discloses sufficiently definite structure. ’939 Patent, 5:38-43 (“wireless I/O unit 206 establishes two or more access points 402, such as multiple access points 402(1), 402(2) . . . 402(N).”), 5:57-58 (“In operation, access station 102 establishes multiple co-located access points 402 using wireless I/O unit 206.”), 5:30-64 (“each access point

of the multiple access points 402 may correspond to, for example, an individual access point in accordance with an IEEE 802.11-based standard.”), 4:17-23 (“Wireless I/O unit 206 is capable of transmitting and/or receiving (i.e., transceiving) signals (e.g., wireless communication(s) 106 (of FIG. 1)) via antenna array 208.”), 5:40-43, 4:5-7, 4:44-46, 2:53-56, 13:48-51, Figs. 2 and 4; cl. 9 (“wherein each access point of the plurality of access points corresponds to a communication beam of a plurality of communication beams that emanate from the access station”); cl. 10 (“wherein each access point...is associated with a medium access controller/baseband unit pair.”). The specification confirms that wireless I/O unit is a structure in the access station that contains structural components such as baseband processors (BB units 608), RF processor (RF parts 610), Ethernet switch/router 602, beamformer 612, and antenna array 208. *Id.* 6:60-64. It describes that the wireless I/O unit 206 can produce “multiple communication beams 202(1), 202(2) . . . 202(N)” by using a beamformer with antenna array 208 (*id.* 4:44-46), indicating the inputs, outputs, and connections between wireless I/O unit 206 and, e.g., the antenna array 208. The claim language and the specification therefore disclose the inputs, outputs, connections, and operations of the wireless I/O unit 206 as the structure in a wireless access station that establishes access points (e.g., beams) with its baseband and RF processors, beamformer, transceivers, and antenna array.

**ii. Even if the term is means-plus-function, it is not indefinite.**

If this Court were to depart from the holding of the Central District of California that this is not means-plus-function, the specification discloses corresponding structure clearly linked to the recited function of establishing a plurality of access points in the form of the wireless input/output unit 206 structure or its equivalents. The structure is clearly linked to the recited function. ’939 Patent, 5:38-43 (“wireless I/O unit 206 establishes two or more access points 402, such as multiple access points 402(1), 402(2) . . . 402(N).”). And wireless I/O unit 206 in the specification is a structure at least because the specification clarifies that it is the physical apparatus

containing, e.g., baseband processors (BB units 608), RF processor (RF parts 610), Ethernet switch/router 602, beamformer 612, and antenna array 208. *Id.* 6:60-64.

**C. “signal transmission/reception coordination logic” (’939 patent, claims 15, 30)**

Plaintiff’s Proposal	Defendants’ Proposal
<p>No construction necessary; plain and ordinary meaning; not subject to means-plus-function treatment under 35 U.S.C. § 112 (6).</p> <p>Alternative proposed construction, should the term be treated as a means-plus-function limitation: not indefinite.</p> <p><b>Function:</b> Claim 15: ascertaining, by monitoring the plurality of access points for received signals, that: a first access point of the plurality of access points is receiving a first signal on a first channel, a second access point of the plurality of access points is receiving a second signal that is ongoing on a second channel, restrain[ing] at least a third access point of the plurality of access points from transmitting a third signal on a third channel responsive to the ascertaining that the first access point is receiving the first signal and that the second access point is receiving the second signal that is ongoing-on the second channel, wherein the restraining at least the third access point prevents degradation to the first and second signals.</p> <p>Claim 30: ascertaining, by monitoring the plurality of access points for received signals, that a first access point of the plurality of access points is receiving a first signal on a first channel, restrain[ing] at least a second access point of the plurality of access points from transmitting a second signal on a second channel different from the first channel responsive to the ascertaining that the first access point is receiving the first signal.</p> <p><b>Structure:</b> Signal transmission/reception logic 404 and/or MAC coordinator logic 606 and/or 6:1-51 and/or 6:65-7:20 and/or 9:11-59 and/or 11:19-12:21 and/or 14:28-15:22 and/or 15:23-65 and/or 16:53-67 and/or 18:12-55 and equivalents thereof.</p>	<p>Means-plus-function under § 112, ¶ 6 and indefinite.</p> <p><b>Function:</b> Claim 15: “ascertaining, by monitoring the plurality of access points for received signals, that:” (i) “a first access point of the plurality of access points is receiving a first signal on a first channel,” (ii) “a second access point of the plurality of access points is receiving a second signal that is ongoing on a second channel,” (iii) “restrain[ing] at least a third access point of the plurality of access points from transmitting a third signal on a third channel responsive to the ascertaining that the first access point is receiving the first signal and that the second access point is receiving the second signal that is ongoing-on the second channel, wherein the restraining at least the third access point prevents degradation to the first and second signals”</p> <p>Claim 30: (i) “ascertaining, by monitoring the plurality of access points for received signals, that a first access point of the plurality of access points is receiving a first signal on a first channel” and (ii) “restrain[ing] at least a second access point of the plurality of access points from transmitting a second signal on a second channel different from the first channel responsive to the ascertaining that the first access point is receiving the first signal.”</p> <p><b>Structure:</b> none disclosed</p>

Plaintiff's Proposal	Defendants' Proposal
The corresponding structure of “signal transmission/reception logic 404” includes the characteristics and configuration set forth for the signal transmission/reception coordination logic 404 (and the MAC coordinator logic 606, which is subsumed within the corresponding structure of the signal transmission/reception coordination logic 404) in the '939 Patent, including at 6:1-51 and/or 6:65-7:20 and/or 9:11-59 and/or 11:19-12:21 and/or 14:28-15:22 and/or 15:23-65 and/or 16:53-67 and/or 18:12-55, and equivalents thereof	

The phrase “signal transmission/reception coordination logic” does not invoke § 112 ¶ 6. Alternatively, if the Court does construe this phrase as subject to § 112 ¶ 6, the term is not indefinite because the structure that is clearly linked to the purported functions is set forth in the specification such that a POSITA would understand that structure with reasonable certainty.

**i. Pre-AIA 35 USC. § 112 ¶ 6 is not applicable because this term recites sufficiently definite structure.**

“The failure to use the word ‘means’ creates a rebuttable presumption that § 112 ¶ 6 does not apply.” *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1007 (Fed. Cir. 2018). This presumption cannot be overcome unless “the challenger *demonstrates* that the claim term fails to recite sufficiently definite structure or else recites function without reciting structure for performing that function.” *Id.* (emphasis in original) (quoting *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015)). “From a procedural standpoint, this presumption imposes on [Defendants] a burden of going forward with evidence to rebut ... the presumption.” *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1367 (Fed. Cir. 2022) (quoting *Apex, Inc. v. Raritan Comp., Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003)).

Thus, to invoke the application of § 112 ¶ 6, Defendants bear the burden of showing that “signal transmission/reception coordination logic” fails to “recite sufficiently definite structure”

and recites “function without reciting sufficient structure for performing that function,” in light of the intrinsic record and extrinsic evidence presented. *See Zeroclick*, 891 F.3d at 1007.

Defendants cannot meet this burden. In *XR Communications LLC v. Cisco Systems, Inc. et al.*, *Samsung Electronics Co. Ltd. et al.*, *Microsoft Corporation*, Case Nos. 6:21-cv-623, 6:21-cv-626, 6:21-cv-695 (W.D. Tex.) (Albright, J.), the Court construed “signal transmission/reception coordination logic” to have its plain meaning and found the accused infringers could not rebut the presumption that 35 U.S.C. § 112 ¶6 does not apply. Ex. 7 (WDTX Order). This Court should reach the same result. *Id. See also WSOU Investments LLC v. Google LLC*, No. 2022-1063, 2023 WL 6889033, at \*4 (Fed. Cir. Oct. 19, 2023) (reversing the district court’s finding that § 112 ¶ 6 applied to the terms “computer program code,” “memory,” and “processor” because “a person of ordinary skill in the art reading the claim in light of the specification would understand that the recited computer program code is stored in a memory structure and running on the processor”).

The term “signal transmission/reception coordination logic” recites sufficiently definite structure and connotes structure considering the claims, specification, and knowledge of an ordinary artisan. *First*, the ’939 patent teaches a POSITA to implement the signal transmission/reception coordination logic 404 in the baseband processing layer of off-the-shelf processing chips in a wireless routing device. Ex. 2 (’939 Patent), 18:39-44 (“signal transmission/reception coordination logic 404 may be implemented at the baseband layer in a system that utilizes off-the-shelf chips in which MAC and baseband functionality are integrated into a single chip or chips that may not separately expose desired MAC signal(s) (e.g. MAC primitives)”). Accordingly, a POSITA understands this term recites definite structure, because it is implemented in the physical structure of the baseband processing layer of the processor chip, which is an off-the-shelf component. *Id.*

Second, the contextual claim language, and corresponding embodiments in the specification, clarify that the signal transmission/reception coordination logic is a structure because it is contained within and coupled to other physical structures, such as the claimed “wireless input/output unit,” which a POSITA understands to be a physical structure comprising e.g. baseband processors (“BB units 608”), signal processors (“RF parts 610”), an Ethernet switch (“Ethernet switch/router 602”), a beamformer (“beamformer 612”), and an antenna array (“antenna array 208”), as described in the specification. *See* ’939 Patent, 6:54-7:6, FIG. 4 (depicting “signal transmission/reception coordination logic 404” coupled within “wireless input/output unit 206”). This placement of logic alongside other clearly structural terms highlights that it is being used to connote structure. *See VR Optics LLC v. Peloton Interactive, Inc.*, 345 F. Supp. 3d 394, 410 (S.D.N.Y. 2018) (holding “placement of ‘logic’ alongside and in the same format as...other clearly structural terms highlights that the...patent is using the term logic to connote a known structure rather than as a nonce substitute for the word ‘means.’”)

Thus, as construed by the U.S. District Court for the Western District of Texas, this term is not means-plus-function and would be understood as a sufficiently definite term for structure because the specification explains that the signal transmission/reception coordination logic 404 is “implemented at the baseband layer in a system that utilizes **off-the-shelf chips**.” ’939 Patent, 18:39-44. This falls squarely under the Federal Circuit’s latest guidance on Section 112(6) in *Dyfan v. Target Corp.*, 28 F.4th 1360 (Fed. Cir. Mar. 24, 2022) (holding that terms “code” and “application” are not means-plus-function where they are available “off-the-shelf”). In *Dyfan*, the Federal Circuit held that the term “code” was not means-plus-function because “persons of ordinary skill in the art would have understood that the word ‘code,’ when coupled with language describing its operation, here connotes structure.” *Id.* at 1367-68. Further, the Federal Circuit held



that the term “application” was not means-plus-function because persons of ordinary skill in the art would have understood “application” to refer to a “computer program intended to provide some service to a user, and that developers could have, at the relevant time, selected existing ‘**off-the-shelf software**’ to perform specific services and functions.” *Id.*

The term at issue is analogous to the structural terms in *Dyfan*. Like the term “application” in *Dyfan*, which was a known structure because it could be implemented using “off-the-shelf software,” here the ’939 Patent discloses that the signal transmission/reception coordination logic 404 “may be implemented at the baseband layer in a system that utilizes **off-the-shelf chips**.” ’939 Patent, 18:39-44. This is even *more* structural than an “application,” because it is embodied as a *physical* circuit structure in the baseband processing layer of an off-the-shelf chip. *See also Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1373 (Fed. Cir. 2003) (holding “circuit” connotes structure and is not § 112(6)) (cited with approval in *Dyfan*).

Furthermore, like the “code” in *Dyfan*, here the ’939 Patent claims couple the term “signal transmission/reception coordination logic” with “language describing its operation,” including the “ascertaining” and “restraining” steps recited in the claims. *Dyfan*, 28 F.4th at 1367-68. Accordingly, the signal transmission/reception coordination logic 404 in the ’939 Patent is analogous to the “code” and “application” terms found not to invoke § 112(6) in *Dyfan*.

This term is also analogous to the “processor” term found not to be means-plus-function in *VDPP* case. *See VDPP LLC v. Vizio Inc.*, No. 2021-2040 (Fed. Cir. Mar. 2022) (nonprecedential) (reversing means-plus-function treatment for “processor”).

**ii. If means-plus-function treatment applies, this term is not indefinite.**

If the Court finds this term is subject to § 112 ¶ 6, then it should adopt the same construction as the U.S. District Court for the Central District of California and find that the corresponding structure in the specification is the “signal transmission/reception coordination logic 404” and the

“MAC coordinator logic 606.” Ex. 5 (ECF No. 312, Minute Order Adopting R&R) at 8-10.

The first issue is whether the specification supports the claimed functions. It does, including at '939 Patent, 6:19-53. For instance, this recites the function of “restraining transmission *on a first channel* with a *first access point 402 even when receiving* a wireless communication on a *second different channel* with a *second access point 402.*” '939 Patent, 6:19-53. The full paragraph from the '939 Patent provides even more context:

With reference again to FIG. 4, one access point 402 (and/or communication beam 202) may operate on a different channel from that of another access point 402 (and/or communication beam 202). If the different channels are adjacent and/or not sufficiently-well defined, it may be beneficial to *restrain transmission on a first channel with a first access point 402 even when receiving a wireless communication on a second different channel with a second access point 402.* In another exemplary implementation for *different channel situations*, *signal transmission/reception coordination logic 404 may restrain transmission on one channel on the basis of reception on another channel* with an ongoing transmission on a third channel to *prevent (e.g., inter-modulation) distortion to the signals being communicated in the wireless system.*

'939 Patent, 6:19-53.

This is direct linkage to the claimed functions. '939 Patent, 6:19-53. Further, the sentence goes on to explain that for “*different channel situations*, signal transmission/reception coordination logic 404 may restrain transmission on one channel on the basis of reception on another channel with an ongoing transmission on a third channel to prevent [] distortion to the signals.” *Id.*

The next issue is whether the specification clearly links a structure to these claimed functions. Here, the claimed functions are clearly linked to the “signal transmission/reception coordination logic 404.” '939 Patent, 6:19-53. Indeed, the specification expressly teaches that this is a function of “signal transmission/reception coordination logic 404,” which “restrain[s] transmission on one channel on the basis of reception on another channel.”

In prior litigations, the accused infringers argued that this clear linkage was insufficient

because “signal transmission/reception coordination logic 404” is just a “black box.” But this is no “black box” case, as the U.S. District Court for the Central District of California found. As shown below, the specification teaches a POSITA what is inside the signal coordination logic 404, how to implement it, what it is coupled to, its inputs and outputs, and *how* it performs its functions.

*First*, “signal transmission/reception coordination logic 404” is not a “black box,” because the specification teaches a POSITA that the “signal transmission/reception coordination logic 404 may be implemented at the baseband layer in a system that utilizes off-the-shelf chips in which MAC and baseband functionality are integrated into a single chip or chips that may not separately expose desired MAC signal(s)”. ’939 Patent, 18:39-44. This informs a POSITA that the signal transmission/reception coordination logic 404 is a baseband circuit structure that is implemented in an off-the-shelf baseband and MAC chipset—not a black box. This is an even clearer case of definite structure than *Telcordia Technologies, Inc. v. Cisco Systems, Inc.*, 612 F.3d 1365 (Fed. Cir. 2010). In that case, the figures of the patent only showed the relevant controller’s circuit as a purported black box, but said nothing about the internal components. *Id.* Nonetheless, the Court held that “the absence of internal circuitry in the written description does not automatically render the claim indefinite” because a POSITA would have understood how to build the controller’s circuit. *Id.* at 1376-1377. Here, the ’939 Patent is going above and beyond the knowledge of a POSITA—it *tells* the POSITA to implement the signal transmission/reception coordination logic 404 in the baseband layer of an off-the-shelf baseband and MAC chipset. ’939 Patent, 18:39-44.

*Second*, logic 404 is not a black box because the specification discloses to a POSITA the inputs and outputs to the signal transmission/reception coordination logic 404 structure in the baseband layer of the chip. The specification explains that the “logic 404 is shown operating at the baseband level. Signal transmission/reception coordination logic 404 accepts as inputs receive

information from multiple RF parts 610(1, 2,...N) and produces as outputs combined receive information from multiple respective BB units 608(1, 2,...K).” ’939 Patent, 18:25-31.

*Third*, Figure 4 clarifies the signal transmission/reception coordination logic 404 is contained within and coupled to other physical structures within the access station, such as the claimed “wireless input/output unit,” which a POSITA understands to be a physical structure comprising baseband processors (“BB units 608”), signal processors (“RF parts 610”), an Ethernet switch (“Ethernet switch/router 602”), a beamformer (“beamformer 612”), and an antenna array (“antenna array 208”). *See* ’939 Patent, 6:54-7:6, FIG. 4 (depicting “signal transmission/reception coordination logic 404” coupled within “wireless input/output unit 206”).

*Fourth*, the specification also explains the inner structure that the signal transmission/reception coordination logic 404 uses to perform the recited function of restraining transmissions on one channel on the basis of reception on a different channel. The ’939 Patent, 5:65-6:15 confirms that the logic 404 maintains a specific numbered list of access points 402(1)-402(N). Each access point is listed and numbered so that it can be identified in relation to each other access point that is receiving a signal on the same channel or on a different channel. ’939 Patent, 5:65-6:15. As another example, column 15 (referencing Figure 10) explains the structure of the logic 404 includes “receive information combiner 1002” and “receive information selector 1004,” which are structures that apply the “signal coordination function to the receive information to produce the combined receive information” which is then “utilized to ascertain signal reception and restrain signal transmission.” ’939 Patent, 15:30-65. This disclosure also identifies the structure of “*channel selectivity 1008*,” which is a structure that enables the logic 404 to restrain transmissions on the basis of reception on a *different channel*. *Id.*

*Fifth*, as the Central District of California court found, the specification teaches “in a more

specific implementation with reference to Figures 6 and 8, signal transmission/reception coordination logic 404 may be realized as MAC coordinator logic 606.” ’939 Patent, 15:49-65. Accordingly, a POSITA would understand at least two embodiments for the signal transmission/reception coordination logic 404: the baseband implementation corresponding to Figure 13, and the MAC implementation corresponding to Figures 6 and 8. Figure 13 discloses receive information input to logic 404 from RF Part 610 and the combined receive information output to BB unit 608, whereas Figures 6 and 8 disclose an embodiment where the input is from BB unit 608 and the signal coordination logic 404 (realized as MAC coordinator logic 606) outputs constructive receive indicator to MAC 604. ’939 Patent, 15:49-65, 18:25-31, FIGs. 6, 8, 13.

Thus, the corresponding structure is “signal transmission/reception coordination logic 404” and the “MAC coordinator logic 606.” Ex. 5 (CDCA Order) at 8-10.

**D. “restrain . . . responsive to the ascertaining that the first access point is receiving the first signal and that the second access point is receiving the second signal that is ongoing-on the second channel” (’939 patent claim 15) / “restrain . . . responsive to the ascertaining that the first access point is receiving the first signal” (’939 patent claim 30)**

Plaintiff’s Proposal	Defendants’ Proposal
No construction necessary; plain and ordinary meaning.	Plain and ordinary meaning, <i>i.e.</i> , “while the first access point is ascertained to be receiving the first signal and the second access point is ascertained to be receiving the second signal that is ongoing-on the second channel” (claim 15)  and “while the first access point is ascertained to be receiving the first signal” (claim 30)

These phrases do not require construction and should maintain their plain meaning. Defendants’ proposed construction imposes a temporal requirement that is not part of the plain meaning of these terms in the context of the specification and prosecution history. Defendants point to no evidence of lexicography or disavowal that would justify imposing these temporal limitations. *See Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)

(lexicography and disavowal are only two exceptions to rule of ordinary and customary meaning).

The U.S. District Court for the Central District of California previously rejected a similar proposed construction for “responsive to.” Ex. 5 (CDCA Order Adopting R&R) at 11-12. The accused infringers had argued that the restraining step must be contemporaneous with the ascertaining step, and the Special Master rejected that argument, concluding that “Defendants have not demonstrated that one action being ‘responsive to’ another action necessarily requires the actions to be contemporaneous.” *Id.* citing Ex. 6 (R&R) at 63. The Special Master noted that even if there are disclosed embodiments consistent with “while,” there is no support for limiting the claims to preferred embodiments. Ex. 6 at 63-64. The Special Master also explained that under the doctrine of claim differentiation, claim 8 actually requires “the signal transmission/reception coordination logic restrains at least one other access point of the plurality of access points *while* the first access point is receiving the first signal,” whereas the independent claims do not include the “*while*” language, which reinforces that it would be wrong to construe the independent claim to require “while.” *Id.* The Special Master also reviewed the prosecution history and concluded that “Defendants identify no definitive statements in the prosecution history that would warrant limiting ‘responsive to’ to ‘while.’” *Id.* This Court should reach the same result.

While the claims recite that “restrain” must be “responsive to the ascertaining,” this simply means that the restraining must be responsive to and based on the ascertaining. This language would cover an embodiment where the restraining occurs *at the same time* as the ascertaining or an embodiment where the restraining occurs *after* the ascertaining. The claims do not impose a temporal requirement that the restraining occur while the first/second access point is ascertained to be receiving, as in Defendants’ proposed construction. Effectively, Defendants argument is that the claim is limited to an embodiment where all the claimed functions must be done in “real-time”

(i.e., limiting the claims to restraining *that very second* based on ascertaining that an access point is receiving a signal *that very second*). Defendants propose to construe the claim to exclude any embodiments where the restraining or ascertaining functions are based, in whole or in part, on historical information (e.g., restraining *later that hour* or *later that day* based on ascertaining that an access point is receiving a signal *that hour* or *that day*). This argument contradicts the claims, the specification, and the prosecution history.

First, the claims at issue recite that the logic “is capable of ascertaining, by monitoring the plurality of access points for ***received signals***, that a first access point of the plurality of access points is receiving a first signal on a first channel.” Notably, monitoring for “received signals” uses the past tense, not the present tense. Therefore, the plain language of the claims expressly covers monitoring the access points for *received* signals to ascertain that an access point is *receiving* a first signal, or even to ascertain that a second signal is “ongoing.” The claim language directly contradicts any argument that the “ascertaining” or “restraining” must be done in real-time, because “ascertaining” that signals are “ongoing” is done by “monitoring the plurality of access points for received signals,” including signals “received” in the past.

Second, there is no negative limitation in the claims or prosecution history on *how* the logic ascertains an access point is receiving a signal or on *when* it performs restraining. In context, the plain meaning of the claim covers the use of *past data* (***received*** signals) for the ascertaining step, which also supports that there is no temporal limitation on the restraining step. There is no evidence of disclaimer or lexicography that would limit the claims to restraining *that very second* based on ascertaining that an access point is receiving a signal *that very second*. The claims would also cover restraining *that hour* or *that day* based on ascertaining that an access point is receiving a signal on a specific channel *that hour* or *that day*.

Third, the claims impose no rigid “while” requirement that would exclude embodiments where the monitoring data takes some amount of time to arrive at the signal transmission/reception coordination logic and is not instantaneously available to it. Even though data may take some amount of time to arrive at the logic, this is still monitoring that an access point “is receiving” a signal based on “received signals”. There is no evidence a POSITA would interpret these claims to exclude any embodiment in which the signal logic ascertains an access point is receiving a signal using data that does not *instantaneously* arrive at the logic. For example, in Figure 11, the signal logic 404 is coupled to each access station via a wired or wireless link. ’939 patent, 16:39-67. A POSITA appreciates that in such an embodiment, the signal logic 404 must wait some amount of time to ascertain what signals each access point is receiving, as the data does not transmit via the links 1102a and 1102b instantaneously. All data available to the signal logic 404 is historical data in some sense. Yet a POSITA appreciates that the signal logic 404 is still ascertaining what each access point “is receiving,” even though it may take some time for the channel measurement data to arrive at the signal logic 404 from each access point. The Figure 11 embodiment illustrates that Defendants’ temporal limitations construction contradicts a POSITA’s understanding. Defendants’ construction would result in a paradox where no system could ever infringe, because there is always some temporal gap between the very moment a signal is received, the moment the logic can recognize or parse such data, and the moment the restraint can be imposed. A POSITA understands restraining may be at least somewhat temporally removed from signal reception.

Fourth, Defendants’ argument improperly excludes the “periodic monitoring” embodiment. For example, the claims cover an embodiment that scans the network “periodically” and that restrains transmissions by assigning channels to each access point “responsive to such [periodic] scanning.” It teaches that the “scanning logic 816 may scan across communication



beams 202 using different channels on receive to detect which channel or channels have the least or lowest interference levels. This scanning may occur once, periodically, continuously, and so forth. A channel assignment vector or similar for channel assignment information 802 may be configured responsive to such scanning and interference determinations of scanning logic 812.” ’939 patent, at 13:34-44 (emphasis added). Notably, the “scanning logic 816” and “channel assignment information 802” in this passage are “part of MAC coordinator logic,” an embodiment of the signal transmission/reception coordination logic. ’939 patent, 11:54-64. Accordingly, the claim covers an embodiment in which “scanning may occur...periodically.”

Fifth, the specification also indicates that the claims cover an embodiment in which restraints are imposed by predicting what each access point is *expected* to receive in the future, based on what is ascertained about received signals in the past. In wireless networks, it is well understood that a station assigned to a specific channel will periodically stop and then restart transmissions on that channel. With reference to the Figure 11 embodiment, the specification explains that “coordination logic 404” is configured to “restrain[] transmission from an access point when another access point...that is operating on the same or a different channel (e.g., that is adjacent or otherwise) is expecting an immediate response to a frame that was transmitted by it.” ’939 patent, 17:18-32 (emphasis added). Likewise, claim 23 provides that the signal logic performs “the ascertaining that the access point of the plurality of access points is receiving the signal on a second different channel” when this “access point is expecting a short-term response to a frame.” ’939 patent, 21:1-14. These disclosures are inconsistent with Defendants’ narrowing construction.

**E. “the access point” (939 patent, claims 20- 21, 33-34)**

Plaintiff’s Proposal	Defendants’ Proposal
the first access point	Indefinite for lack of antecedent basis

This Court should adopt the construction adopted by the U.S. District Court for the Central

District of California. Ex. 5 (CDCA Order) at 17 (“The term ‘the access point’ refers back to ‘a first access point’ for antecedent basis.”). This is consistent with a POSITA’s understanding. Ex. 6 (R&R) at 70 (“Also, although ‘the access point’ lacks any explicit antecedent basis, the implicit antecedent basis is reasonably clear because “the ascertaining” refers back to the ‘ascertaining’ and ‘receiving’ that are recited as to ‘a first access point.’ Thus, the claim is reasonably clear that ‘the access point’ refers back to ‘a first access point.’”) (citing Ex. 13). Even in IPR2022-00958, the Petition mapped “the first access point” of claim 1 and “the access point” in claims 20-22 and 33-35 to the same “access point 1”. Ex. 11, IPR2022-00958, Petition, at 34-35 (“Kasami teaches a ‘first access point’ that ‘is receiving a first signal on a first channel’....More specifically, Kasami’s wireless communication apparatus (access point 1)...”), 55 (mapping “the first access point” in claims 20-22 and 33-35 to “access point 1.”).

#### IV. U.S. PATENT NO. 8,737,511 (“’511 PATENT”)

##### A. “n multiple-input multiple-output transceivers (MIMO)” (’511 patent, claims 1, 10)

Plaintiff’s Proposal	Defendants’ Proposal
No construction necessary; plain and ordinary meaning	“a single unit comprising a MIMO transmitter and a MIMO receiver, with common circuit components”

Defendants’ proposed construction imposes requirements that are not part of the plain meaning of this term in the context of the specification and prosecution history. Defendants point to no evidence of lexicography or disavowal of scope that would justify imposing these limitations. *See Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (lexicography and disavowal are only two exceptions to rule of ordinary and customary meaning).

The addition of “single unit...with common circuit components” is improper to the extent it suggests that the transmitter circuit components need to be common with the receiver circuit components. The claims only require MIMO transceivers and do not impose additional limitations

on them. If Defendants’ proposal of “single unit...common circuit components” simply requires a MIMO transceiver, then it is superfluous. If it requires the same circuits be used for transmission and reception, then this requirement is not part of the claims. There is no part of the intrinsic record that restricts the circuit design of the MIMO transceiver. If anything, it suggests numerous design options are compatible with the invention. Ex. 3, (‘511 patent), 4:29-39, 5:33-41.

**B. “MIMO transmitter ...” / “MIMO receiver ...” (‘511 patent, claims 1, 10, 20)**

Plaintiff’s Proposal	Defendants’ Proposal
No construction necessary; plain and ordinary meaning	MIMO transmitter: transmitter that processes MIMO signals for transmission  MIMO receiver: receiver that processes received MIMO signals

As with the “MIMO transceiver” term, Defendants point to no evidence of lexicography or disavowal of scope that would justify departing from plain meaning. Persons of ordinary skill in the art understand the definition of a MIMO transmitter and a MIMO receiver. Notably, Defendants’ construction is almost entirely a repetition of language already in the claims requiring that the MIMO transmitter be configured to process transmit signals and that the MIMO receiver be configured to process received signals. A judicial construction would suggest some special importance to the addition of the modifier “MIMO” to the word “signals” in the proposed constructions, which is not warranted. To the extent Defendants’ proposal of “MIMO signals” simply requires a MIMO transmitter or a MIMO receiver, then this requirement is superfluous to what is required by the claims. But to the extent Defendants’ proposal of “MIMO signals” requires something else, it is unclear what that is, and in any event, it would not be part of the claims.

**C. “2nd Generation Partnership Project (3GPP) Long Term Evolution (LTE), 3GPP LTE-Advanced, 3GPP LTE-TDD, 3GPP LTE-FDD” (’511 patent, claims 2, 11)**

Plaintiff’s Proposal	Defendants’ Proposal
No construction necessary; plain and ordinary meaning.  Alternative proposed construction: 3rd Generation Partnership Project (3GPP) Long Term Evolution (LTE), 3GPP LTE-Advanced, 3GPP LTE-TDD, 3GPP LTE-FDD.	“one of the 3GPP LTE, LTE-Advanced, LTE-TDD or LTE-FDD standards that existed at the time of the invention”

Since there is no disclaimer or lexicography, there is no basis to limit this claim to standards “at the time of the invention.” The U.S. District Court for the Western District of Texas reached the same conclusion on a related term. Ex. 7 (WDTX Order) (Term #2, rejecting the language “at the time of the invention.”) A POSITA understands that claims 2 and 11 refer to the 3GPP cellular communication standards, which a POSITA understands is updated from time to time. *See, e.g.* ’511 Patent at 3:30-47 (“2nd Generation Partnership Project (3GPP) Long Term Evolution (LTE), 3GPP LTE-Advanced, 3GPP LTE-TDD (time division duplexing), 3GPP LTE-FDD (frequency division duplexing)...and other commercial wireless standards, and/or proprietary standards.”). The ’511 patent is thus not limited to a particular 3GPP standard as of a particular time.

**V. U.S. PATENT NO. 10,715,235 (THE ’235 PATENT)**

**A. “transceiver” (’235 patent, claims 1, 15, 18, 19)**

Plaintiff’s Proposal	Defendants’ Proposal
No construction necessary; plain and ordinary meaning	“a single unit comprising a transmitter and a receiver, with common circuit components”

As with “MIMO transceiver” (’511 patent), Defendants identify no lexicography or disavowal. If Defendants’ proposal of “single unit...common circuit components” requires the same circuits be used for transmission and reception, then this requirement is not part of the claims. There is no part of the intrinsic record that restricts the circuit design of the transceiver.

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Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that the counsel of record who are deemed to have consented to electronic service are being served on July 15, 2024, with a copy of this document via the Court's ECF system.

/s/ Marc Fenster  
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